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AUTHOR	Maia, Marcus
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ABSTRACT

A study of verb agreement and clause structure in Karaja, a Brazilian indigenous language of Macro-Je stock, discusses the subject and object agreement systems with relation to the Feature Specification Constraint. Implementation of the SOV order in Karaja is then analyzed and evidence is presented for the existence of a single functional phrase that must be postulated in order to handle the OV word order and check the object structural case. Object clitic constructions are then contrasted with object verb-internal affixes, and main verbs with auxiliaries. Concluding remarks are offered on the structure of the clause and the parametrization of the functional category of Agreement. (Contains 13 references.) (Author/MSE)

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Verb Agreement and the Structure of the Clause in Karaja

Marcus Maia
Federal University of Rio de Janeiro

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Abstract: In this paper, we discuss the subject and object agreement systems in Karaja, a brazilian indigenous language of the Macro-Je stock, with relation to the Feature Specification Constraint (FSC) proposed by Murasugi, 94. We then analyze the implementation of the SOV order in Karaja. We present evidence in Karaja for the existence of a single functional phrase - not necessarily an AgrO - which must be postulated in order to handle the OV word order and check the object structural case. We then contrast object clitic constructions with object verb-internal affixes and main verbs with auxiliaries. Finally, we offer some concluding remarks on the structure of the clause and the parametrization of the functional category of Agreement.

S. Manuel Dupont

0 - Introduction

Chomsky (1993) elaborates on the proposals set forth in Pollock (89) that the Infl node is made up of separate projections of the functional categories Tense, Negation and Agreement, analyzing the agreement system as being formed by the projection of two functional phrases, namely, AgrSP and AgrOP. Two possibilities are considered in Chomsky (1993) to analyze the combination of V and its affixes: a building theory and a checking theory. According to the former, affixes are acquired in overt syntax by uninflected verbs through X° movement of V to the head of the relevant functional category. Checking theory, on the other hand, predicts that verbs are inserted in syntax fully inflected, checking its morphemes against the corresponding features in the functional categories to which they move. A third possibility is suggested by Iatridou (1990) and adopted by Mitchell (1994) to account for agreement cases which exhibit fusional morphology : the relational theory of agreement, which proposes that agreement is not a functional node at all, but a relational

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category. More recently, Chomsky (1995) proposes to dispense entirely with AgrSP and AgrOP, opening the way for a change from an AGR-based to a multiple-SPEC theory.

In this paper, we review some of these hypotheses in order to assess their relevance to the analysis of Karaja, an Amazonian language of the Macro-Je stock. We start the discussion by analyzing the subject and object agreement systems in Karaja with relation to the Feature Specification Constraint (FSC) proposed by Murasugi, 94. We will then analyze the implementation of the SOV order in Karaja. We present evidence in Karaja for the existence of a single functional phrase - not necessarily an AgrO - which must be postulated in order to handle the OV word order and check the object structural case. We then contrast object clitic constructions with object verb-internal affixes and main verbs with auxiliaries. Finally, we offer some concluding remarks on the structure of the clause and the parametrization of the functional category of Agreement.

I - AgrS and AgrO in Karaja

The Karaja Data: Karaja is a language that allows null arguments. Subject agreement morphemes, which are obligatory, may optionally co-occur with an overt argument; object agreement morphemes, on the other hand, are restricted for first and second persons and, therefore, cannot co-occur with overt NP's.

When fully inflected, verbal stems in Karaja are accompanied by subject, object and theme prefixes and by suffixes that indicate aspect, number, negation, mood/tense and others[1] :

(1) r-i-wa-heteny-myhy-reny-õ-reri
3S-theme-1O-hit-ASP-PL-NEG-PRES
"They do not hit me continuously"

Minimally, inflected verbal roots are supported by subject and object prefixes, theme prefixes and mood/tense suffixes:

(2) r-u-ru-ra
3S-theme-die-Past
"(he) died"

(3) ar-e-lyy-kre
1S-theme-tell-Fut
"(I) will tell"

(4) t-e-lyy-ta
2S-theme-tell-Past
"(you) told"

Note that in (2), (3) and (4) the root can be considered a bound form, as it must be obligatorily accompanied by person and theme prefixes as well as by mood/tense suffixes. Thus, forms such as (5), (6) or (7), in which at least one of these affixes is not present, are not possible in Karaja.

(5) * ø-u-ru-ra
ø-theme-die-Past

(6) * ar-ø-lyy-kre
1S-ø-tell-Fut

(7) * t-e-lyy-ø
2S-theme-tell-ø

Additionally, Karaja presents a system of pronominal agreement in which there is a clear split in the marking of the sole argument of intransitive verbs. In this sense it is clearly a language of the active type. Thus, as illustrated in (8), stative verbs are conjugated with a series of subject prefixes which is basically identical with the series of prefixes which identify objects of active verbs. The complete paradigm is shown in (9).

(8) 1. wa- wa-su-reri "I am dirty"
1Sub-dirty-pres.

2. a- a-su-reri "You are dirty"
2Sub-dirty-pres.

3. i- i-su-reri "He is dirty"
3Sub-dirty-pres

(9)

Person	Possessive	A	Sa	So	P
1	wa-	r-/ar-	r-/ar-	wa-	-wa-
2	a-	t-/b-	t-/b-	a-	-a-
3	i-	r-	r-	i-	ø

The Feature Specification Constraint: Murasugi (94) discusses several morphological features in AGR, and argues that the specification or spell-out of such features is constrained by a structural principle, the Feature Specification Constraint (FSC), which states that the features of a lower Agr must be less specified than, or as equally specified as, the features of a higher Agr. Murasugi proposes that the notion of a structurally lower element being less specified than a higher one is found throughout the grammar and concludes that the FSC is based on the structural relation between a higher and a lower Agr.

Apparently, the Karaja data displayed above seems to comply with the FSC, since the subject cross-referencing verb morphemes make up a more elaborate series than the object verb-internal markings. Subject agreement morphemes vary according to mood/tense whereas verb internal object morphemes are restricted to first and second persons, which is a clear indication that so called object agreement is less specified than subject agreement. However, the Karaja analysis sketched below poses a problem for the structural nature of the FSC, which crucially relies on the

existence of two agreement phrases: an AgrSP and an AgrOP. As we will argue in the following sections of this paper, there is evidence in Karaja in favor of the positing of an AgrOP, but against the positing of an AgrSP.

II - Word order

According to Maia (1986), Karaja is typologically classified as an active-stative language which displays dominant SOV word order. In this section we seek to account for the facts of Karaja word order within the minimalist framework, following Chomsky (92), who develops proposals by Pollock (89) that VP-adjoined adverbs can provide a test to determine whether or not V-raising occurs before spellout in a language. First we discuss the linearization of the SOV word order in clauses in which the main verb is fully inflected; we then analyze clauses in which the main verb is a bare infinitive and the auxiliary is inflected; finally, we suggest a parametrization between the object and the subject agreement systems: while the former has clearly a functional syntactic configuration, the latter is analyzed as a morphosyntactic relation, resulting from postsyntactic operations.

The paradigm presented in (10) seems to indicate that main verbs in Karaja move overtly to the head of AgrO:

(10) a. Kua habu hawò r-i-winy-ra ywimy.
that man canoe 3S-theme-make-Past slowly
"That man made the canoe slowly"

b. * Kua habu riwinyra ywimy hawò.
that man made slowly canoe

c. ? Kua habu hawò ywimy riwinyra.
that man canoe slowly made

d. * Hawò riwinyra kua habu ywimy.
canoe made that man slowly

Notice the contrast between the sentence in (a) on the one side and the (b) and (c) sentences, on the other side. Within the framework under consideration here, these differences are taken to indicate that the verbal and nominal features of AgrO are strong in Karaja. The ungrammaticality of the (b) example is thus analyzed to indicate that V-raising in the overt syntax is not enough to guarantee the convergence of the sentence. In Chomsky's 1992 system, the object NP must also raise to the specifier of AgrO in order to check accusative case in the spec/head relation with the head of AgrO. Similarly, the ungrammaticality of (c) is an evidence that the object NP cannot raise past the spec of VP to land on the spec of AgrOP, if the verb does not raise to the head of AgrO in order to provide the adequate checking domain for the object NP to be equidistant from both the spec of VP and the spec of AgrOP. The ungrammaticality of the (d) sentence is an indication that the subject NP must move out of its VP internal position to check its nominative case before the point of spellout. Thus, the moves of V and of the subject and the object NP's in the overt syntax produce the linearization of the SOV order which is dominant in Karaja.

Notice that morphological requirements determine the movement of V to AgrO: the need to check the strong AgrO feature before spellout. Therefore, as shown above the verbal head adjoins to the AgrO head creating the complex head [$_{AgrO}$ V + AgrO]. The verb movement to AgrO creates equidistance between the spec of VP and the spec of AgrO, allowing the object NP to raise over the specifier of VP in compliance with the shortest movement principle (Chomsky 1992).

Notice, however, that in order that the SOV linearization may be maintained, the verb should not move any higher before spellout. The fact that the verb can only move from AgrO covertly at LF entails the following implications: a) unlike AgrO features, which are strong, and must be checked in the overt syntax, AgrS features are weak in Karajá, allowing procrastination of V movement till LF; b) a constructive system which explains affixation via syntactic head movement is ruled out; c)

equidistance cannot be invoked in order to permit the VP-internal subject NP to skip the closest potential landing site - the spec of AgrO - and target the spec of TP.

Notice, finally, that basically the same facts may be adequately predicted in Chomsky's 1995 system. In the (1995) system of multiple specs, the light verb represented as little v has a strong N-feature, requiring the object to raise to the outer spec configuration, checking its features with V. If an adverbial phrase is adjoined to vmax, object raising crosses it, yielding the construction OB-ADV-vmax.

III - Object clitics and Auxiliaries

Karajá clitics which identify first, second and third persons are morphologically case marked with the same morpheme *-my* , which marks the object NP's of some verbs. Object verbal desinences occur immediately to the left of the verbal root and identify first and second persons only. In some verbs, clitics seem to be in complementary distribution with the verb-internal object affixes, as exemplified in the examples in (11). In (11a) a clitic construction is provided. Notice that the first person clitic *wa* in (11a) receives the same marking *-my* as the nominal object of the verb *-ohote-* "to hit" in (11b). Notice further in (11c) that the verb internal object marking strategy is not available to the same verbal root which takes the clitic. Examples (11d), (11e) and (11f) show the reverse possibility, that is, a case in which a verbal root accepts object internal markings while the clitic strategy is not available:

(11)a. Kua habu wa-my r-a-ohote-re
that man 1S-ACC 3S-theme-hit-Past
" That man hit me"

b. Kua habu weryry-my r-a-ohote-re
that man boy-ACC 3S-theme-hit-Past
"That man hit the boy"

c. * Kua habu r-a-wa-ohote-re
that man 3S-a-1O-hit-Past
"That man hit me"

d. Kua habu weryry r-i-heteny-re
that man boy 3S-theme-hit-Past
"That man hit the boy"

e. Kua habu r-i-wa-heteny-re
that man 3S-theme-1O-hit-Past
"That man hit me"

f. *Kua habu wa-my r-i-heteny-re'
that man 1O-ACC 3S-theme-hit-Past
"That man hit me"

Constructions with auxiliaries may provide an additional ground to support the analysis of object desinences and clitics in Karajá as being manipulated in the overt syntax in contrast with subject affixes which do not seem to be checked within the structural configuration of a functional phrase. Consider the following paradigm:

(12)

(a) Waha benora waximy r-a-re detimy
my father tucunare to fish 3S-theme-Past rapidly
"My father went to fish tucunare rapidly"

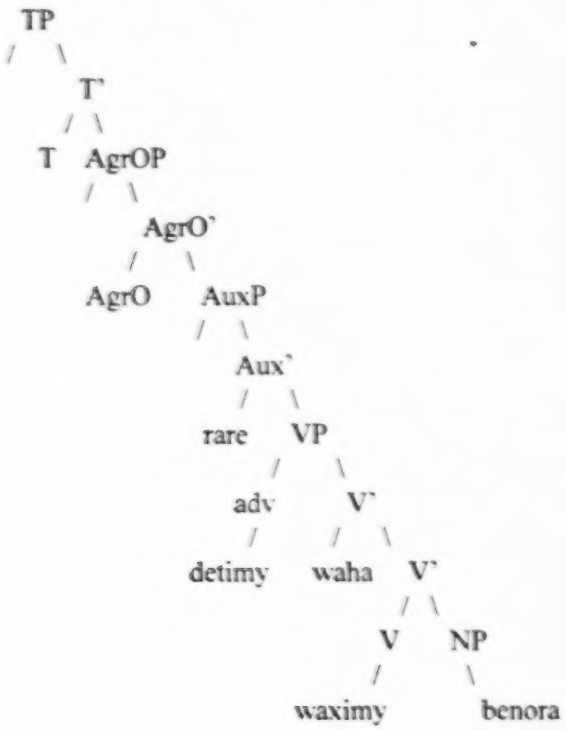
(b) *Waha benora rare waximy detimy
my father tucunare went to fish rapidly

(c) *Waha benora waximy detimy rare
my father tucunare to fish rapidly went

(12a) is a construction in which the main verb is a bare infinitive. The subject prefix as well as the tense suffix are realized in an auxiliary form which must follow the main verb, as demonstrated by the ungrammaticality of (12b). (12c) tests the relative position of auxiliary and a VP-adjoined adverb, indicating that the auxiliary must be above the

VP at spellout[2] . We propose that the auxiliary is heading an Aux phrase which is merged to AgrO, above the VP node, as displayed in the configuration (13):

(13)



According to this analysis, the auxiliary has no morphological justification to raise before spellout since subject agreement and tense are both weak in Karaja and may procrastinate to check its features at LF. The main verb however must raise overtly since, as we showed above, Karaja has strong AgrO features. This analysis is independently motivated by the observation that the object morpheme which can occur prefixed to the verbal stem (14a), cannot occur in the auxiliary verb (14b), but may occur as a clitic, outside the verbal stem (14c):

14 (a) Kua ijorosa r-i-wa-rò-kre.
that dog 3S-theme-1O-bite-Fut.
"That dog will bite me"

(b) *Kua ijorosa r-i-rò-my r-a-wa-kre
that dog 3S-theme-bite-Sub. 3S-theme-1Ò-Fut
"That dog is going to bite me"

(c) Kua ijorosa wa-my r-i-rò-my r-a-kre
that dog 1O-Sub 3S-theme-bite-Sub 3S-theme-Fut
"That dog is going to bite me"

The fact that the object morpheme cannot be affixed to the auxiliary provides independent confirmation to the analysis presented above: the object agreement feature is strong in Karaja and must be checked before spellout, thus it can be realized in the main verb and as a clitic to the main verb, being properly checked in overt syntax in both cases. However it cannot occur as an affix to the auxiliary, since auxiliaries remain in situ in overt syntax, only checking its features at LF. Auxiliaries in Karaja can take the complete set of verbal affixes, except for object prefixes. Thus a sentence as (15) with a fully inflected verb can optionally be expressed as (16) in which all affixes, but the object prefix are realized in the auxiliary. (17) as (14b) demonstrate that the object prefix cannot be realized in the auxiliary. This fact becomes clear if we adopt the analysis sketched above.

(15) r-i-wa-heteny-myhy-reny-ð-reri
3S-theme-1Obj-hit-Asp. cont.-Pl-Neg-Pres
"They are not hitting me continuously"

(16) r-i-wa-heteny-my r-a-myhy-reny-ð-reri
3S-theme-1Obj-hit-Sub 3S-theme-Asp.cont.-Pl-Neg-Pres
"They are not hitting me continuously"

(17) * r-i-heteny-my r-a-**wa**-myhy-reny-ð-reri
3S-theme-hit-Sub 3S-theme-**1Obj**-Asp.cont.-Pl-Neg-Pres
"They are not hitting me continuously"

IV- The structure of the clause and the status of the functional categories

In contrast with the system of object agreement, which is manipulated at the level of overt syntax through spec/head agreement within a functional node above VP (clitics) by adjunction of the verb to the head of AgrOP (object verbal-internal desinences), the Karaja system of subject agreement seems to be better understood in terms of morphosyntactic relations than in terms of a syntactic structural configuration. The existence of multiple subject agreement morphology in Karaja is a clear indication that a single AgrS node would not be able to handle the syntactic checking of a verb such as exemplified in (18) and in (19), in which the second person subject feature spreads to the plural and tense morphemes. Following Roberge & Cummins (1994), we suggest that the subject phi-features inserted in the verbal form in the lexicon are not checked in the syntax, but sent to the morphological component of PF after spellout. Notice that it is not simply a phonological process which takes place here, since the verbal root is not affected by the spreading. It could be further speculated that the subject agreement phi-features which do not get checked in the syntax are visible at PF, triggering independent post-syntactic machinery available in the morphological component of PF. This analysis is consistent with the claim in Chomsky (95) that AGR exists only when it has strong features, since it is nothing more than an indication of a position that must be occupied by overt operations. Since subject agreement morphemes are weak, there is no reason for an AgrSP to be present at all and the subject agreement relations are manipulated post-syntactically, as suggested.

(18) **r**-a-rybè-**r**eny-**re**
3S-theme-speak-PL-Past
"They spoke"

(19) **t**-a-rybè-**t**eny-**te**
2S-theme-speak-2S/PL-2S/Past

Clearly, the analysis of the fragment of Karaja clause structure presented here implies that syntactic movement is only invoked in relation to the case of nominals and to AgrO. The whole set of verbal affixes (subject, aspect, direction, plural, negation, mood/tense)[3] need only to be checked at LF, what is in compliance with the economy considerations which are at the root of the Minimalist Program.

In summary, Karaja presents V-movement of main verbs out of the VP shell to check strong AgrO features and allow Object NP shift to the spec of AgrO past the spec of VP, in order to license the checking of accusative case for the object NP via spec/head agreement. Auxiliary verbs are merged to the head of AgrO, above the VP and do not need to raise in the overt syntax to check any features, since the only strong affixes in Karaja are the object prefixes which do not append to auxiliaries. We suggest that the Aux node is transparent to long head movement, as proposed by Rivero (94) for languages of the Balkans. Thus, unlike French, which displays main verb movement as well as auxiliary movement, and unlike English which displays auxiliary movement but not main verb movement, Karaja exhibits main verb movement, but not auxiliary movement. It is also proposed that the subject agreement system in Karaja may be better understood as being structured by means of morphophonological rules at the level of morphology after spellout, whereas the object agreement system has a more strictly syntactic nature.

NOTES

[1] We follow here the analysis of Karaja verbal morphology proposed in Fortune (64) and developed by Maia (86). It must be noted, however, that Rivail (94), following Fortune (73), proposes a reanalysis of the theme prefixes as part of the verbal stem.

[2] Even though the auxiliaries focused in this paper seem to be simply tense suffixes, they belong to a very elaborate class, expressing distinct semantic features (cf. Maia (86)). Thus it is not possible to analyze them as simply features in T and it is necessary to postulate that auxiliaries are full projections in Karaja.

[3] As our main concern in this paper is to discuss the nature of agreement in relation to basic word order, we do not present the complete set of the lexical and functional categories in Karaja. In Maia (1997), a more elaborate proposal of Karaja clause structure is outlined, including the representation of the Complementizer Phrase (CP) and the Focus Phrase (FP).

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